

-(c) Remarks

This application has been reviewed in light of the Office Action dated March 21, 2008. Claims 1, 3,5-9 and 31-45 are presented for examination. Claims 2 and 4 have been canceled without prejudice or disclaimer of subject matter. Claim 1 has been amended to define still more clearly what Applicants regard as their invention. Claims 35-37 have been amended as to matters of form only. No change in scope is either intended or believed effected by at least these latter changes. Claim 1 is in independent form. Favorable reconsideration is requested.

Support for the Amendment to claim 1 is found, *inter alia*, on page 18, lines 10-14, and page 20, line 23 to page 21, line 4.

Claims 35-37 were amended to employ the phrase used in claim 35, line 5, --a “predetermined interval”. The rejection of claims 35-37 under 35 U.S.C. § 112, second paragraph, has now been resolved and the rejection should be withdrawn.

Claims 1-5 and 31-34 were rejected as anticipated by U.S. Patent No. 6,432,758 (Cheng ‘758). Claims 6-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cheng ‘758. Claims 38-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cheng’ 758 in view of Hayafuji ‘403. Although claims 35-37 were not rejected over the cited art, it is understood that such claims were rejected on the basis of the grounds advanced on pages 5 and 6 of the Official Action of September 26, 2007. The grounds of rejection are respectfully traversed.

In the claims, it is recited that the film is thicker in the specific amorphous region than in the peripheral amorphous region. Further, it is recited that the melting step is performed so that a single crystal grain or a single cluster remains unmelted in the specific amorphous

region and during resolidification crystal growth occurs from the specific amorphous region toward the peripheral amorphous region.

In Hayafuji et al. (US 4,564,403), the film formed in region 106 is polysilicon (column 7, lines 49-51). Polysilicon is a material of multiple small silicon crystals. In contrast, the film formed in the present invention is amorphous, hence it is different. An amorphous film has a random, continuous network structure.

In Cheng et al. (US 6,432,758), on the other hand, the melting step is not performed so that a single crystal grain or a single cluster remains unmelted in the specific amorphous region, as apparent from the abstract setting forth that the partially melted amorphous silicon is used as crystallization seeds. Specifically, as seen in Cheng, Fig. 6, two regions 206 act as seeds and crystallization after melting proceeds toward the direction of the black arrow. Accordingly, two crystal grains growing from either side will collapse to form a grain boundary at the central position of region 205. See Figs. 11 and 12 of Cheng. In Cheng, the region which corresponds to the specific amorphous region is region 205, not region 206.

In contrast, the melting step of the present invention is performed so that a single crystal grain or a single cluster remains unmelted in the specific amorphous region. Therefore, the specific region of the present invention does not contain a grain boundary as found in Cheng et al. Accordingly, the present method provides a specific region with an improved crystalline property.

As seen above, amended claim 1 states that crystal growth occurs from a thicker central amorphous region toward the thinner peripheral amorphous region. To the contrary, in Cheng et al., crystal growth progresses in the opposite direction, which is apparent from the

drawings. In Cheng et al., since crystal growth progresses from both sides 206 toward the (specific) region 205, a grain boundary will be formed. Finally, in Cheng the amorphous silicon region 205 is thinner than the peripheral amorphous region 206. See Col. 4, lines 1-15. This is opposite to the present invention.

Wherefore, the claims should be allowed and the case passed to issue.

Applicant's undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

/Peter Saxon/
Peter Saxon
Attorney for Applicants
Registration No.: 24,947

FITZPATRICK, CELLA, HARPER & SCINTO
30 Rockefeller Plaza
New York, New York 10112-3801
Facsimile: (212) 218-2200